Revisiting Constructional Changes in Uni-directional Copulative Perception Verb Constructions *

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1. Introduction

The well-known perceptual expressions exemplified in (1) could be seen to be idiosyncratic because the perception verbs are copulative and take the percept rather than the perceiver as the subject. These types of perceptual expressions were defined by Taniguchi (1997) as copulative perception verb constructions (CPV constructions henceforth). CPV constructions such as (1) generally have three main elements: a subject NP, a perception verb, and adjectival complement. They have some specific characteristics, one of which is that they have an obligatory adjectival complement, which makes sentences like (2) unacceptable.

(1) a. John looks happy.
b. This cake tastes good.
c. This flower smells sweet. (Taniguchi 1997: 270-271)

(2) a. * He looks.
b. * That sounds. (Taniguchi 1997: 272)

Previous diachronic studies argue that CPV constructions historically developed because of the perception system, which included both bi-directional perceptions <*sound, smell*> and uni-directional perceptions <*look, feel, taste*>. These studies also claim that the verbs describing the bi-directional perceptions were the first established CPV constructions, and subsequently, motivated by the bi-directional perception verbs, the verbs conveying uni-directional perceptions appeared as CPV constructions. This paper fills the research gaps left by previous studies, by observing the historical development of the uni-directional perceptions in more detail.

This study is organized as follows. Section 2 gives a summary of previous studies on CPV constructions. Section 3 examines some of the problems raised in previous research. Section 4 more closely examines the semantic changes in the uni-directional perception verbs; *look*, *feel*, and *taste*. Section 5 concludes the study and gives suggestions based on the study results.

2. Previous studies

Before examining Taniguchi's (1997) CPV construction analysis, a review is given of the organization of grammatical alignments in Cognitive Grammar referred to by Langacker. Langacker

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(1987: 217) claimed that grammatical subject/object distinctions are underlined by TRAJECTOR/LANDMARK asymmetry, with the trajector characterized as the most prominent (FIGURE) within the conceptual relationship designated by the semantic structure, with the secondary salient entity in a relational predication being the landmark. Langacker also mentioned that the subject and object proved to be special cases of the trajector and landmark. Therefore, Cognitive Grammar considers that the grammatical subject in a syntactic structure is realized by the most salient thing within the asymmetrical relation in events the speaker/hearer wants to conceptualize.

Now, what is chosen as a subject in perceptual expressions? As mentioned in Croft (1993) and Kemmer (1993), a mental state usually involves two processes: [1] the experiencer must direct his/her attention to the stimulus, and [2] the stimulus causes the experiencer to adopt a certain mental state; therefore, a mental state has a two way causal relationship, as shown in Figure 1.

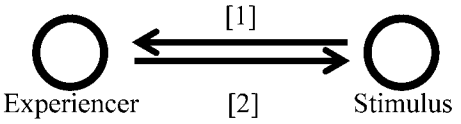

Figure 1: Two processes in a mental state (adapted from Croft 1993: 64)

Cognitive Grammar imposes the trajector on the head of the asymmetrical relation involved in the described event (Taniguchi 1997: 275). Then, when the first process is conceptualized, the experiencer is represented as the grammatical subject, whereas the stimulus is also likely to be taken as the subject to realize the second process. These different processes also influence perceptual events and can be expressed using two different constructions. Kemmer (1993) argued that the subject in perceptual expressions could be divided into either the experiencer of the perceptual event or the stimulus, as shown in the following examples.

(3) a. Joe smelled the garlic. [Experiencer-based verbs]
b. Garlic smells good. [Stimulus-based verbs]

Kemmer referred to (3a) types as experiencer-based verbs and (3b) types as stimulus-based verbs. In (3a), where the perceptual subject *Joe* pays attention to and cognizes the perceptual object *garlic*, the perceptual subject is construed as the most salient in the asymmetric perceptual relationship and stands as the grammatical subject. In (3b), where the emission of the perceptual object excites the senses of the experiencer, the stimulus occurs in the grammatical subject because it is construed as the most prominent entity. CPV constructions, therefore, are subsumed into the latter type.

Taniguchi (1997) researched when the verbs in CPV constructions were first established as CPV constructions and demonstrated that the verbs *smell* and *sound* were established as CPV constructions before the other verbs, such as *look*, *feel*, and *taste*, as shown in Table 1.

	Perception verbs	Experiencer-based	Stimulus-based (CPV)
Bi-directional perception	**smell**	1175	**1220**
	sound	1352	**1374**
Uni-directional perception	**look**	1000	**1400**
	feel	897	**1581**
	taste	1340	**1552**

Table 1: Summary of the first attested appearances of CPVs (adapted from Taniguchi 1997: 279)

Table 1 shows that the CPV construction with *smell* and *sound* appeared almost simultaneously with the corresponding experiencer-based use, while the construction with the other verbs did not emerge until late in the Middle English period. Taniguchi (1997) explained that establishment differences for these two CPV construction types were owing to the differences in the perceptual events. That is, olfactory or auditory senses can be understood as either a realization of a stimulus emission or as the accomplishment of a perceptual contact by a perceptual experiencer. This case is termed as bi-directional perception by Taniguchi (1997). On the contrary, visual, gustatory, or tactile senses can be conceived only as a perceptual contact by the experiencer, which is called uni-directional perception:

Figure 2: Underlying cognitive models for the various perception verbs (Taniguchi 1997: 278)

It is not surprising that bi-directional CPV constructions emerged earlier because the semantic structure denoting the stimulus emissions situation in a bi-directional verb is compatible with the syntactic alignment of the CPV construction. As mentioned, as the stimulus is conceived as the most salient entity in the perceptual asymmetry, it takes the grammatical subject position in the CPV construction. That is, bi-directional verbs have a plausible cognitive motivation to appear in a bi-directional CPV construction. Taniguchi (1997) claimed that bi-directional CPV constructions were conventionalized as a construction, and subsequently, the CPV construction was applied to the uni-directional perception verbs by analogical extension of the sensory modality. Taniguchi believed that since the CPV construction became established as a construction for bi-directional perception verbs, the original stimulus-based situation conveying the emission using a perceptual object came to express a property of the subject participant. (It would not be hard to imagine that "expressions like *this flower smells sweet(ly)* can entail that sweetness is one of the properties of the flower when it is smelled (Taniguchi 1997: 285).") In this case, as the construction no longer encoded the stimulus emission but instead encoded the property of the perceptual object, it was easily extended to uni-directional

perception verbs. Thus, this usage began being used with sensory modality verbs and became conventionalized as a grammatical construction consisting of a form and meaning pair, as in (4).

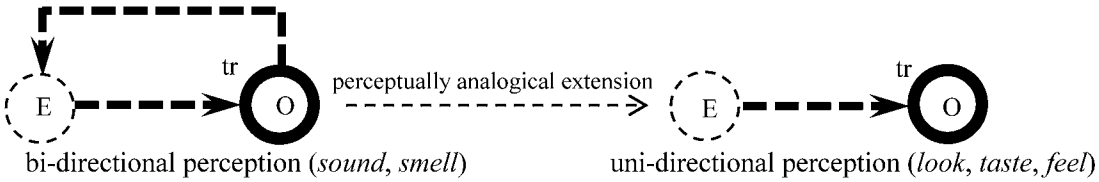

Figure 3: Development of CPV constructions (adapted from Taniguchi 1997, 2012)

(4) **CPV Constructions** Syntax: $SUBJ_{[perceived\ object]}\ V_{[perception\ verb]}\ ADJ_{[attribute]}$

Semantics: An evaluation of the subject via the perception of the speaker

(Adapted from Taniguchi 2012: 193)

Taniguchi's cognitive-based work on these constructional changes revealed that as all these verbs described sensory modalities, CPV construction developments consisted of categorical extensions from bi-directional perceptions to uni-directional perceptions, motivated by semantic analogies. This study contributed to the cognitive linguistic view for grammatical construction and language change.

3. Problems

There are two main problems with Taniguchi's language change CPV construction analyses related to the linguistically and theoretically empirical data.

First, although Taniguchi (1997) applied visual, tactile, and gustatory senses to the uni-directional perceptions, this argument was not appropriate on a closer examination of this language phenomena. Taniguchi (1997) claimed that these three senses ware classified as uni-directional perceptions because they did not take their perceptual object as the trajector (that is, the grammatical subject), as in the contrasts shown in (5) and (6).

(5) a. The smell reached me.
    b. The sound reached me. (Taniguchi 1997: 277)

(6) a. ?? The feeling reached me.
    b. ?? The taste reached me.
    c. ?? The sight reached me. (ibid.)

However, this data does not necessarily mean that the sensory modalities do not reside in bi-directional perception. As Taniguchi admitted, these sentences represent a situation in which the stimulus is perceived as being separate from the grammatical object. Namely, the contrasts in (5) and (6) merely reflect a +/- physical CONTACT situation (cf. Viberg 1983), but do not provide evidence that

the three sensory modalities should not take their perceptual object as a trajector or that they should not be recognized as having bi-directional perception. Further, there are examples in which the perceptual object stands in the grammatical subject position, as shown in (7) and (8). These three senses can be used in a construction in which the perceptual object may be the trajector. Even though they are less amenable to the occurrence of the perceptual object as the trajector than the other two senses, the visual, tactile, and gustatory senses can also be categorized as bi-directional perceptions.

(7) a. John can see the peak from here.
b. This peak is visible for hundreds of miles. (Croft 1993: 65)

(8) a. You can taste the garlic in this stew. (Oxford Advanced Learner's Dictionary)
b. Its seeds are edible to humans, … (COCA, MAG)
c. they are digestible by the animal. (COCA, NEWS)

The second problem is related to the analogical extension from the bi-directional CPV to the uni-directional CPV constructions as such an extension may be perceived as violating one of the theoretical Cognitive Grammar assumptions. As mentioned earlier, Cognitive Grammar assumes that the relational figure is assigned to the head of the asymmetrical relationship in the described event. However, this assumption is incompatible with the analogical extension of the uni-directional perception because the end of the asymmetrical perceptual relation becomes the most salient entity with this extension, as sketched in Figure 4. Therefore, is it possible to construe the end of the asymmetrical relation – the percept – as its trajector although uni-directional perception verbs originally require the experiencer as its trajector? Taniguchi did not explain why this extension could be realized despite this elusive contradiction between the theoretical assumption and the semantic changes in the uni-directional perception verbs.

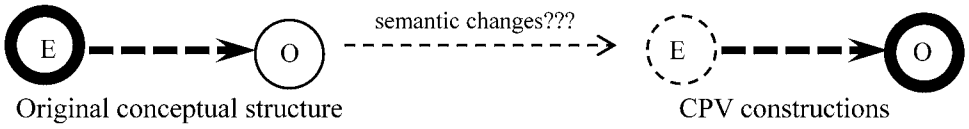

Figure 4: Development of uni-directional CPV constructions

This paper takes a closer examination at the diachronic changes of uni-directional perception verbs: *look*, *feel*, and *taste:* as it is argued that the uni-directional CPV constructions with these three verbs were motivated by the other perception verbs and also by semantic changes. This paper argues, therefore, that these three verbs each underwent different semantic changes separate from the bi-directional perception verbs that facilitated their use in CPV constructions, which suggests that the semantic/syntactic changes emerged based on extensions to the verb-specific semantic changes related to lower-level schemas as well as construction changes related to higher-level schemas.

4. Data collection and analysis

The Oxford English Dictionary (OED) is used to collect the data to survey the historical development of the these three uni-directional perception verbs, because it includes both present-day meanings and the history of individual words. It also has more than 600,000 words and 3.5 million quotations over 1,000 years from classic literature, specialist periodicals, film scripts and cook books.

4.1. Look

As stated by Taniguchi (1997), the verb *look* appeared with an adjectival complement in a CPV construction around the 14th/15th century.

(9) I kende furst Masouns, And lered hem liuel and lyne, þauȝ I loke dimme.
(c1390 W. Langland, Piers Plowman (Vernon) (1867) A.xi 1. 135)

This verb occurred with an adverbial phrase or an *as* complement to express the specific appearance of the trajector before the establishment of the CPV construction. What is even more interesting here is that at the same time, the verb *seem* appeared to behave in the same way to describe a similar meaning, as shown in (10) and (11).

(10) Hi sul agrise And lok as bestis þat cun no witte.
(a1325 W. Heuser, Kildare-Gedichte (1904) 102)

(11) Þat semes als a lake of hell. (a1300 Mundi, C. 2863)

Tokuyama (2007) argued that it was *seem* that allowed for the extension of CPV use to peculiar verbs that described sensory modalities. However, this may be too strong an assertion because the five sense-specific verbs passed through a different route from *seem* as that are unable to occur with the complementizer *that* or a subject-to-subject raising, as indicated by Gisborne and Holemes (2007). Nonetheless, Gisborne and Holmes (2007: 23) also suggested that subordinating conjunctions such as *as* introduced a propositional attitude that could also have led to the development of CPV constructions. For example, because *look* occurs with an *as* or *as if* complement very early in its history, this could prove that it was seen to be close to *seem*. Therefore, the verb *look* could have emerged as a CPV construction through the analogical extension of the semantically and syntactically similar verb *seem*.

4.2. Feel

As Taniguchi (1997) stated, the verb *feel* appeared in CPV constructions in a quasi-passive sense from the 16th century, although it sometimes required the infinitive complement *to be*, as in (12).

(12) a. The hande, feeling to bee rough.

(1581 G. Pettie tr. S. Guazzo, *Ciuile Conuersat.* ii. sig. M5)

b. If it feels heavy, then we give him more Rope.

(1694 *Acct. Several Late Voy.* (1711) ii. 165)

c. If the hand is passed back and forth, the carpet will feel smooth in one direction.

(1966. C. H. Hayward, *Home Handyman* iii. 62)

Taniguchi (1997) claimed that uni-directional perception verbs appeared in CPV constructions by analogical extension from the bi-directional perception verbs. However, as mentioned already, this analysis was inadequate from Cognitive Grammar perspective because it is considered unnatural to construe the perceptual object as the most salient entity (a grammatical subject) in an asymmetrical perceptual relationship even though it corresponds to the end of that asymmetrical relationship. Therefore, it should be argued that the verb *feel* did not become part of CPV usage because of an extension from bi-directional CPV constructions; rather, it was motivated by semantic changes in the verb and its commonalities with the bi-directional perception verbs.

In fact, according to the OED, this verb may have taken an adjectival complement that was semantically different from the CPV construction before the emergence of the CPV construction. For example, the Middle English examples in (13) describe the experience of a particular physical feeling or emotion. This usage is not identical with a CPV construction, as shown in (14), as only CPV constructions can allow the perceiver to occur in a *to* prepositional phrase. The unacceptability of (14b), which is called psychological use by Nakamura (2010), is because the grammatical subject *John* plays both the perceiver and the percept roles (cf. Nakamura 2010).

(13) he asked him hou he ferde and felede.

HE ASK HIM HOW HE BEHAVE AND FEEL

(c1390. *MS Vernon Homilies* in *Archiv f. das Studium der Neueren Sprachen* (1877) 57, 242)

(14) a. The cloth feels soft to me. (CPV Construction)

b. * John feels sick to me. (psychological use) (Nakamura 2010: 231)

However, using the same syntactic psychological use structure as a CPV construction could have motivated the semantic extension. Actually, it is possible to observe ATTENUATION (cf. Langacker 1999) in the psychological use of the CPV construction; that is, as the control exerted by the agentive subject (perceiver) fades away, the percept role in the grammatical subject becomes immanent. Attenuation is observed in the constructional changes and grammaticalization (Langacker 1999 and others). Therefore, the psychological use may have motivated the semantic extension to the CPV

construction for *feel*. In effect, Gisborne and Holmes (2007) explored the semantic changes in perception verbs such as *look*, *seem*, *appear*, and *feel* from the Helsinki Corpus, and suggested that a possible path to the CPV construction for *feel* was through the ambiguity of psychological uses of this sort as the usage could have a perceptual subject or a perceptual object. Thus, it could be argued that the CPV construction for *feel* was motivated both by the other bi-directional CPV constructions and also because of the semantic changes due to attenuation, as shown in (15).

(15) [$SUBJ_{[perceiver/percept]}$ *feel* $ADJ_{[emotion/evaluation]}$] (*He feels sick.*)

⇓

[$SUBJ_{[percept]}$ *feel* $ADJ_{[evaluation]}$] (*The carpet feels smooth.*)

4.3. Taste

The uni-directional CPV historical construction analysis by Taniguchi (1997) revealed that *taste* emerged as a CPV construction in the 16th century, which was also confirmed by the OED, which states that the following conveys a meaning similar to the current CPV usage, "To have a taste of a specified or implied kind." However, the sentence in the dictionary was probably not sanctioned by a current CPV construction, as it was not accompanied with an adjectival complement, as in (16). The verb *taste* possibly first took an adjectival complement and appeared as a CPV construction in the late 17th century, as exemplified in (17) from the OED.

(16) Tastyng or castynge an yll taste or sauoure, *virosus*.
TASTING OR CASTING A BAD TASTE OR SMELL, AWFUL.
(1552 R. Huloet, Abcedarium Anglico Latinum)

(17) It will make him tast sowr. (1681 J. Chetham, Angler's Vade Mecum xxxix. 168)

The data suggests that the explanation given by Taniguchi (1997) is therefore inadequate because her argument presupposes that the bi-directional CPV constructions with adjectival complements triggered the analogical extension for uni-directional CPV constructions that represented a property of the subject participant. This argument is logically contradictory to the sentence (16) as *taste* does not follow an adjectival complement to describe a property of the subject participant, which appears to indicate that the initial use of *taste* was not sanctioned by a "genuine" CPV construction as it is now.

I argue that it functioned as a MIDDLE VERB when it first appeared as an intransitive verb that represented the specific taste of a specific thing. The grammatical subject for which these middle verbs are logically the direct object emerged around the 15th/16th centuries, and are often described as generic properties of the subject participant rather than the particular event designated by the verb. Other middle examples are as follows:

(18) a. *waste*: Those persones whyche done consume and waste. (1398 Trevisa, id. xix, xxi, 876)
b. *compare*: Thei ben so fewe that they may not compare with them. (c1450 Merlin, xx, 317)
c. *tear*: His bandes and fete dyd rent and teare for the weight. (1526 Pilg, Pert. 260 b.)
(Vissor 1941: 72)

More interesting is that sentence (16) appeared in the same period as the middle verb, which means that the CPV construction instantiating *taste* was realized not because of the analogical extension from the bi-directional CPV constructions, but because of the analogical extension of the CPV constructions after the verb had been conventionalized as a middle verb, as illustrated in the following:

(19) [$SUBJ_{[perceiver]}$ *taste* $OBJ_{[percept]}$] <Transitive: *I tasted the soup.*>
↓
[$SUBJ_{[percept]}$ *taste* ($ADV_{[evaluation]}$)] <Middle: *It tastes (well).*>
↓
[$SUBJ_{[percept]}$ *taste* $ADJ_{[evaluation]}$)] <CPV: *It tastes wonderful.*>

The evidence that the verb *taste* underwent grammatical changes into a CPV construction via a middle verb can be seen in the current grammatical behavior of this verb; that is, the current *taste* CPV construction has similar middle verb characteristics and limitations. As stated, middle verbs denote an inherent property of the grammatical subject rather than a particular event, which means that they often avoid appearing in progressive aspects, as in (20). Likewise, the CPV *taste* construction is difficult to use in the progressive aspect, as shown in (21), and based on data collected from the *British National Corpus*, tends to be understood as a generic reading, as shown in (22). These data, therefore, support the view that the CPV *taste* construction was an extension of the middle verb motivation as well as because of the bi-directional CPV constructions. Because the verb *taste* has an established CPV construction via the middle verb, *taste*-specific (cf. verb-specific (Croft 2003)) constructional constraints can be observed in the present day.

(20) * Bureaucrats are bribing. (Keyser and Roeper 1984: 385)
(21) a. ?? This soup is tasting funny.
b. Oh, it's smelling good in here. (COCA, SPOK)
c. …your hair's looking great. (COCA, SPOK)
(22) a. Hence, honey tastes sweeter, weight for weight, than plain sucrose. (BNC, FEX)
b. You may notice that food tastes different when you are pregnant. (BNC, G2T)

5. Conclusion

This paper examined the diachronic changes in three uni-directional perception verbs – *look*, *feel*,

and *taste* – and demonstrated that the uni-directional CPV constructions were established by virtue of their semantic changes. These three verbs each underwent individual semantic changes that facilitated their inclusion in CPV constructions. It was also shown in Section 4.3 that the establishment of the *taste* CPV construction via a middle verb forced the construction to express an inherent property of the subject rather than an on the spot evaluation. This suggests that past semantic/syntactic changes in certain verbs may be the reason for present-day constructional restrictions.

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